

We claim:

1. A wireless network comprising:
  - a plurality of access points, the access points cooperative to automatically choose channels for operation so that each access point uses a different channel, the access points being further cooperative to share channels in a manner that minimizes interference if no free channels remain; wherein access points sharing channels decrease their transmit power to minimize same channel interference; wherein access points transmit messages including a Backoff value to other access points, the Backoff value indicating to the other access points how far the transmitting access point's power has been adjusted down; wherein the access points that received the messages use the Backoff value to determine their own Backoff values.
2. The wireless network of claim 1 further comprising:
  - a plurality of stations associated across the access points, each station associated with one access point on one channel; wherein the stations receive messages from access points including the Backoff value; wherein the stations turn down their transmit power in response to the Backoff value received in the messages;

wherein stations canvass other channels to see if another channel includes an access point that would provide better network performance;

wherein better network performance is provided if an access point on another channel is closer than the access point to which the station is currently associated;

if a station finds an access point on another channel that would provide better network performance, the station sends a message to the access point to request association with the access point;

wherein access points receive the messages from the stations and selectively allow association of the stations to the access points based on the loading of the access point.

3. A wireless network comprising:

a plurality of access points, the access points cooperative to automatically choose channels for operation so that each access point uses a different channel,

the access points being further cooperative to share channels in a manner that minimizes interference if no free channels remain;

wherein access points sharing channels decrease their transmit power to minimize same channel interference;

wherein access points transmit messages including a Backoff value to other access points, the Backoff value indicating to the other access points how far the transmitting access point's power has been adjusted down;

wherein the access points that received the messages use the Backoff value to determine their own Backoff values;

a plurality of stations associated across the access points, each station associated with one access point on one channel;

wherein the stations receive messages from access points including the Backoff value;

wherein the stations turn down their transmit power in response to the Backoff value received in the messages;

wherein stations canvass other channels to see if another channel includes an access point that would provide better network performance;

wherein better network performance is provided if an access point on another channel is closer than the access point to which the station is currently associated;

if a station finds an access point on another channel that would provide better network performance, the station sends a message to the access point to request association with the access point;

wherein access points receive the messages from the stations and selectively allow association of the stations to the access points based on the loading of the access point.